

Translating Pasteur to the Maghreb

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More than 125 years after its foundation (*), the Pasteur Institute is still one of the world's largest, best known and most powerful biomedical research institutions¹. The original motherhouse was founded by Louis Pasteur in 1888 thanks to the funds and facilities generously provided by the Paris municipality and the French state and also to the donations of voluntary contributors from France and the most disparate corners of the globe². Before the great savant died seven years later, official branches had already been opened in Saigon, Lille, Tunis, Algiers, Sydney and Nha-Trang, not to speak about many others which had adopted the trademark without having a formal connection to the Parisian headquarters, such as those in Rio de Janeiro, New York, Chicago or Istanbul. During the first quarter of the 20th century, new official institutes were established in various French colonies and protectorates as well as in countries with significant economic, political or cultural links with France such as Brazil, Greece, Romania, the Soviet Union, and Iran. Today, the so-called Institut Pasteur International Network comprises 32 centers in the five continents³.

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1. Marchand, Marie-Hélène. Une histoire de l'Institut Pasteur: au cœur de la santé publique mondiale. Toulouse: Editions Privat; 2015.
2. Weindling, Paul. Scientific elites and laboratory organisation in *fin de siècle* Paris and Berlin. The Pasteur Institute and Robert Koch's Institute for Infectious Diseases compared. In: Cunningham, Andrew; Williams, Perry, eds. The laboratory revolution in medicine. Cambridge: Cambridge University Press; 2002, p. 170-188.
3. Institut Pasteur International Network [cited 24 Sept 2015] Available from: <https://www.pasteur.fr/en/international/institut-pasteur-international-network/network>

In this global network, the North African centres, now framed within a larger MATI (Morocco, Algeria, Tunisia, Iran) scheme, occupied a prominent place from the very beginning. The institutes in Tunisia and Algeria figured among the first to be established outside France and reached a prominent place in terms of research activity, personnel and funds before being transferred to the newly independent Maghreb states, where they both continue to exist nowadays. The only one among the ten Pastorian Nobel prize-winners to have carried out his research in an institute outside France was Charles Nicolle, director at Tunis from 1902 until his decease in 1936. As a result, Pasteur institutes in North Africa have been frequent objects of inquiry within the large corpus of studies devoted to Pasteur and the Pastorian movement. Broadly speaking, their essential chronology, main actors and most important research outcomes have been clarified by a host of commemorative and descriptive publications produced by Pastorians themselves, among which it is worth highlighting those of Maurice Huet and Jean-Pierre Dedet⁴.

However, the last decades have witnessed the emergence of a more innovative and critical historiography. A pioneering article of Marie-Paule Laberge helped situate those institutions in the double context of French colonialism and the Pastorian scientific tradition⁵. But it is Anne Marie Moulin who stands on her own as the most relevant contributor to this renewed literature about Pastorianism in the Maghreb (and the Islamic world at large). Her rich and polymorphous production has dealt with issues ranging from the idiosyncratic «missionary» character of Pastorian expansion to its socio-economic and political background; from the strong personalities of the institutes' directors to the insertion of their research within the international field of tropical medicine; from scientific commemorations to post-colonial trajectories⁶. Later contributions, most of

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4. Huet, Maurice. *Le pommier et l'olivier, Charles Nicolle, une biographie (1866-1936)*. Montpellier: Sauramps Médical; 1995; Dedet, Jean-Pierre. *Les instituts Pasteur d'outre-mer: cent-vingt ans de microbiologie française dans le monde*. Paris: L'Harmattan; 2000; Dedet, Jean-Pierre. *Edmond et Étienne Sergent et l'épopée de l'institut Pasteur d'Algérie*. Pézenas: Domens; 2013.
 5. Laberge, Marie-Paule. *Les instituts Pasteur du Maghreb: la recherche médicale dans le cadre de la politique coloniale*. *Revue Française d'histoire d'Outre-Mer*. 1987; 74 (274): 27-42.
 6. Moulin, Anne Marie. *Patriarchal science: the network of the overseas Pasteur institutes*. In: Petitjean, Patrick; Jami, Catherine; Moulin, Anne Marie, eds. *Sciences and empires*. Dordrecht: Kluwer; 1992, p. 307-322; Moulin, Anne Marie. *L'hygiène dans la ville: la médecine ottomane à l'heure pastorienne (1887-1908)*. In: Dumont, P.; Georgeon, F., eds. *Les villes ottomanes à la fin de l'Empire*. Paris: L'Harmattan; 1992, p. 145-167; Moulin, Anne Marie. *Charles Nicolle*

which have been promoted by Moulin herself, include comprehensive essays on the life and work of Charles Nicolle written by Kim Pelis; publications of Kmar ben Nefissa and Benoit Gaumer on the research and public health initiatives deployed by the Pasteur Institute of Tunis; of Matthieu Fintz and John Strachan on the impact of Pastorian initiatives on Algeria's colonial domination; and of Francisco Javier Martínez on the relation of the Tangier institute's foundation with the 1909-11 plague outbreak in Morocco⁷. Moulin's paper at the end of this dossier provides a synthetic account of the historiographical production on this subject, both commemorative and critical, which acts as a sort of epilogue that complements this introduction.

savant tunisien. Archives de l'institut Pasteur de Tunis. 1994; 71: 355-370; Moulin, Anne Marie. Les instituts Pasteur de la Méditerranée arabe: une religion scientifique en pays d'Islam. In: Longuenesse, Elizabeth, ed. Santé, médecine et société dans le monde arabe. Paris: L'Harmattan; 1995, p. 129-164; Moulin, Anne Marie. Tropical without tropics. The turning-point of Pastorian medicine in North Africa. In: Arnold, David, ed. Warm climates and western medicine: the emergence of tropical medicine, 1500-1900. Amsterdam: Rodopi; 1996, p. 160-180; Moulin, Anne Marie. Une généalogie scientifique. L'«Isnad» de l'Institut Pasteur de Tunis (1893-1993). In: Abir-Am, Pnina, dir. La mise en mémoire de la science. Pour une ethnographie historique des rites commémoratifs. Amsterdam: Éditions des Archives Contemporaines; 1998, p. 207-224; Moulin, Anne Marie. The Pasteur Institute's International Network: scientific innovations and French tropisms. In: Charle, Christophe; Schriewer, Jürgen; Wagner, Peter, eds. Transnational intellectual networks: forms of academic knowledge and the search for cultural identities. Frankfurt: Campus Verlag; 2004, p. 135-164; Moulin, Anne Marie. L'Institut Pasteur au pluriel. Histoire du réseau international des Instituts Pasteur (2003-2013). Médecine/Sciences. 2014; 30 (1): 99-102.

7. Pelis, Kim. Prophet for profit in French North Africa: Charles Nicolle and the Pasteur Institute of Tunis, 1903-1936. *Bulletin of the History of Medicine*. 1997; 71 (4): 583-622; Pelis, Kim. Charles Nicolle, Pasteur's imperial missionary. Typhus and Tunisia. Rochester: University of Rochester Press; 2006; Ben Nefissa, Kmar. La théorie de Charles Nicolle sur l'histoire naturelle des maladies infectieuses. Archives de l'Institut Pasteur de Tunis. 2006; 83: 1-4, 5-12; Ben Nefissa, Kmar; Moulin, Anne Marie; Dellagi, Koussay. La rage en Tunisie au 19e siècle: recrudescence ou émergence? *Gesnerus*. 2007; 64: 173-192; Ben Nefissa, Kmar; Moulin, Anne Marie. La peste nord-africaine et la théorie de Charles Nicolle sur les maladies infectieuses. *Gesnerus*. 2010; 67 (1): 30-56; Gaumer, Benoit. L'organisation sanitaire en Tunisie sous le Protectorat français (1881-1956). Un bilan ambigu et contrasté. Sainte-Foy: Presses de l'Université Laval; 2006; Fintz, Matthieu. Épidémiologie de l'invasion et constitution de l'identité biosociale des fellahin dans l'Algérie coloniale (1910-1962). La lutte contre le paludisme au regard des recherches sur la production des savoirs. In: Baduel, Pierre-Robert, ed. Chantiers de la recherche sur le Maghreb contemporain. Paris: Khartala; 2006, p. 117-133; Strachan, John. The Pasteurization of Algeria? *French History*. 2006; 20 (3): 260-275; Martínez-Antonio, Francisco Javier. "L'année de la peste": santé publique et impérialisme français autour de la crise d'Agadir. *Mélanges de la Casa de Velázquez*. 2014; 44 (1): 251-273.

Further studies are needed in any case. Actually, the contributions of this dossier were originally presented at an international conference held in Paris in November 2014 with the title *Les Instituts Pasteur du Maghreb: des origines aux indépendances nationales*. Following the trail of a meeting organized in Tunis two years before that focused on memory and oral history⁸, the conference sought precisely to promote new topics and methodologies of research. As a result, the main goal of the present dossier is not to add new factual findings to the institutional and scientific history of Pasteur institutes in the Maghreb —though the papers hereby gathered provide valuable additions to both. Neither is it to refine the interpretation of Pasteur institutes as agents of French colonialism— in spite of the papers bringing various innovative insights into this question. Instead, this dossier tries above all to illustrate in different ways the «translation» of Pastorianism from France to the Maghreb or, to be more exact, the multiple processes of «translation» and «displacement» involved in the «culture» of a Pastorian tradition in the southern shore of the Mediterranean since the late 19th century. Nevertheless, it is necessary to point out that these studies have been produced according to each author's research interests and approach and it is only in the selection I have made as editor that the unifying, common thread must be sought.

The ideas of «translation» and «displacement» have been lately receiving attention in the history of science, technology and medicine (STM)⁹. The interest in the version of classical scientific texts into modern languages, as well as in their exchange between different scientific traditions in certain historical periods has of course been consubstantial with the existence of STM history as a discipline¹⁰. The last decades have, nevertheless, seen the focus put on the social and cultural contexts in which such translations were

8. Institut Francaise Tunisie [cited 24 Sept 2015] Available from: <http://www.institutfrancais-tunisie.com/?q=node/2093>

9. For example, the idea of «displacement» was central to Pickstone, John V. *Ways of knowing. A new history of science, technology and medicine*. Manchester: Manchester University Press; 2001. A conference has been recently organized in June 2015 by the Centre for the History of Science, Technology and Medicine of that same university on «Medicines, Histories and Translations». See also: Schaffer, Simon; Roberts, Lissa; Raj, Kapil; Delbourgo, James, eds. *The brokered world. Go-Betweens and global intelligence, 1770-1820*. Sagamore Beach: Science History Publications; 2009.

10. See various examples in Huisman, Frank; Warner, John H., eds. *Locating medical history. The stories and their meanings*. Baltimore: Johns Hopkins University Press; 2006.

performed and their profound effects in the resulting texts¹¹. However, a rather different interest in translation is related to research on «circulations» that has come to occupy a dominant place in the STM field. Kapil Raj has argued that a central question to this new circulatory paradigm refers to how the movement of ideas, practices, instruments or people from one locality to another actually took place¹². Among the various models that have been proposed, translation occupies a relevant place. James Secord has argued that science is essentially «translational» for it is above all «a form of communication», scientific statements being already «vectors with a direction and a medium and the possibility of response»¹³. Translation would thus oblige us, as Lydia Liu affirms, to regard scientific traditions as provisional, ever-changing knowledge configurations resulting from continuous and multiple exchange operations at the same time feasible and problematic¹⁴. According to Marwa Elshakry, scientific translations, far from acting as neutral disseminators of universal truths, have always been key instruments in the sociopolitical and epistemological processes that enabled the articulation of new knowledge communities in the localities of reception¹⁵.

As the first of these three authors duly noted, Bruno Latour was one of the pioneers in the application of the concepts of translation and displacement to the history of STM already in the 1980s, and he did so precisely in his groundbreaking study on Pastorism, *Les microbes, guerre et paix* (1984), later re-published in 2011 as *Pasteur. Guerre et paix des microbes*. Latour proposed an iconoclast account of the Pastorian movement by putting those terms —in the multiple senses in which he used them— at the core of its institutionalization and research. On the one hand, Pastorians managed to translate into the new language of bacteriology previous non-scientific beliefs and scientific doctrines about diseases¹⁶. Bacteriology was then successfully

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11. See, for example, Olohan, Maeve; Salama-Carr, Myriam, eds. Science in translation. The Translator. 2011; 17 (2), Special issue.
 12. Raj, Kapil. Beyond postcolonialism ... and postpositivism: circulation and the global history of science. *Isis*. 2013; 104 (2): 337-347.
 13. Secord, James. Knowledge in transit. *Isis*. 2004; 95 (4): 654-672.
 14. Liu, Lydia, ed. Tokens of exchange: the problem of translation in global circulations. Durham: Duke University Press; 1999.
 15. Elshakry, Marwa. Knowledge in motion: the cultural politics of modern science translation in Arabic. *Isis*. 2008; 99 (4): 701-730.
 16. Latour, Bruno. *Pasteur: guerre et paix des microbes*. Paris: La Découverte; 2011, p. 126.

translated / displaced throughout France (and the French Empire) thanks to its appropriation by many different social groups according to their own purposes¹⁷. On the other hand, Pastorian research methodology consisted for Latour, first of all, in Pastorians displacing themselves and their laboratories where phenomena with the potential to be translated into bacteriological narratives could be found¹⁸. Researchers subsequently returned to their labs to actually proceed to that process of translation, which involved a set of procedures aiming at isolating a particular germ, reproducing the disease in animals and finding a vaccine through attenuation techniques¹⁹. Finally, they went again outside their laboratories to actively promote the displacement of their ideas throughout society, normally by preparing spectacular public shows that successfully displaced natural phenomena to prove their hypotheses or their treatments²⁰. From Latour's point of view, Pasteur institutes, instead of being conceived as solid, self-sufficient entities, should be conceived of as provisionally stable products resulting from all those various translations and displacements²¹. In his own words, Pastorian laboratories «have a history too»²², the only way of understanding them without giving «a miraculous vision» of their existence and activities being precisely to place them at the very end of a long a complex chain of displacements²³.

Following Latour's insights, the papers in this dossier have been selected to illustrate a few of the multiple translations or displacements that occurred in relation to the foundation and activities of the Pasteur institutes in Algeria, Morocco and Tunisia. Thus, the first study by Claire Fredj analyzes the displacement introduced by the creation of the Algiers institute in the existing collective of the so-called *médecins de colonisation*. The institute transformed the functions of those physicians and also what Algerian authorities expected from them but, in turn, they became essential for its existence. For example, anti-malarial campaigns, which constituted one of the main reasons justifying the centre's creation and operations, could only be launched and implemented thanks to the epidemiological

17. Latour, n. 16, p. 101.

18. Latour, n. 16, p. 124-130.

19. Latour, n. 16, p. 130-140.

20. Latour, n. 16, p. 140-152.

21. Latour, n. 16, p. 121.

22. Latour, n. 16, p. 138.

23. Latour, n. 16, p. 121.

information gathered by those doctors and the surveillance they ensured of the various measures deployed on the ground. The second paper by Francisco Javier Martínez deals with the difficulties encountered in the translation of Pastorian institutions to Morocco. On the one hand, Pastorians found it hard to displace Spanish bacteriology that had been earlier introduced in the country with the support of local authorities. On the other hand, translation projects were undertaken in parallel from either metropolitan France or Algeria and the failure of the French to impose their colonial authority over the whole of Morocco prevented the convergence of both in Tangier —which was granted an international status outside the French Protectorate— leading to a counterproductive duplication of institutes in that city and Casablanca, whose scientific achievements stood far from those of Algiers and Tunis. Finally, the last paper by Anne Marie Moulin should be understood as an exercise in historiographical displacement —a meta-displacement by contrast with the «real» ones dealt with in the other papers. Moulin explores the chances for elaborating a common historical narrative of the «Maghreb» Pasteur institutes. Endorsing the latter, recent denomination instead of the classic «North African» tag helps her identify research intersections, institutional links and transversal trends in the history of the Algerian, Tunisian and Moroccan centers. In any case, she does not eschew the fragmentation resulting from their different chronologies, heterogeneous scientific models and disparate personalities of directors, without forgetting the distinctive memories constructed for each one of them after national independences.

I believe that translational perspectives, such as those implied in these papers, can bring substantial changes to the historiography of Pasteur institutes in the Maghreb (in other locations too) if systematically used. These institutes would, for example, cease to appear so strangely isolated from the local societies in which they were founded and begin to show how they were conditioned by local projects of modernization, local scientific traditions or local resistances to imperialism. It would also be easier to connect the various institutes in the Maghreb between them and with those in other regions in terms of the trans-imperial and trans-national circulation of ideas, practices and personnel. The multiple and changing insertion of Pastorian activities within colonial, first, and national, later, health administrations and policies would also be brought to the fore, as well as their role within international or global biomedicine and public health. Finally, continuities and discontinuities between the colonial and

post-colonial or independence periods, among which the defining feature of the persistence of Pasteur institutes in Algeria, Morocco and Tunisia until the present day, would receive closer scrutiny. This dossier, with its limited number of papers, can only be a small step forward in the proposed directions of research. We nevertheless think it can help envisage the vast field of inquiry lying ahead and the novel questions that could be addressed. ■